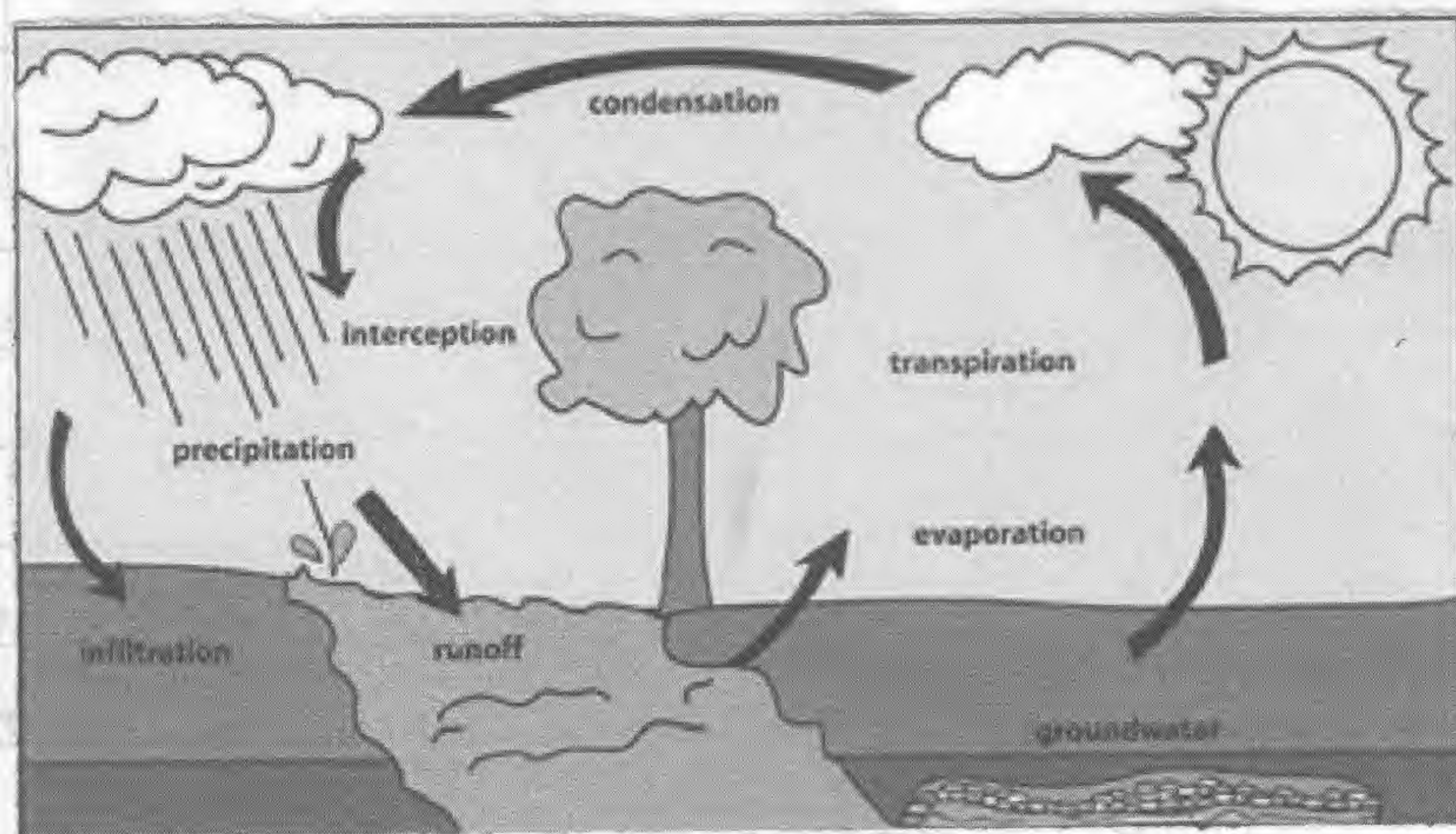


Unit 5: Solutions & Solubility

- Properties of Water

- $\text{pH} = 7$ (Neutral)
- Semi-Covalent bond (Polar)
 - Can attract other molecules
- $0 - 100^\circ\text{C} = \text{Liquid}$
 - $32 - 212^\circ\text{F} = \text{Liquid}$
- Non-Toxic

- Water Cycle



- Solute: Being dissolved

- Solvent: Doing the dissolving usually H_2O

- Types of Solutions: Amount of solution

- Unsaturated: The solution can take more solute
- Saturated: The solution can not take more solute.
- Super saturated: The solution has more solute than it can handle because of high temperature.

Solubility Table / chart:

SOLUBILITY TABLE FOR VARIOUS IONS AT 25°C

Cations \ Anions	H ⁺ Na ⁺ Rb ⁺	Li ⁺ K ⁺ Cs ⁺ NH ₄ ⁺	Be ²⁺ Mg ²⁺	Ca ²⁺	Sr ²⁺	Ba ²⁺	Ra ²⁺	Al ³⁺ Sn ²⁺ Ge ⁴⁺ Bi ³⁺ As ³⁺	Ni ²⁺ Sn ⁴⁺ In ³⁺ Ga ³⁺ As ⁵⁺	Pb ²⁺	Cu ⁺ Hg ²⁺	Ag ⁺
CH ₃ COO ⁻												
NO ₃ ⁻												
ClO ₃ ⁻												
SO ₄ ²⁻												
SO ₃ ²⁻												
PO ₄ ³⁻												
CO ₃ ²⁻												
S ²⁻												
OH ⁻												
Cl ⁻												
Br ⁻												
CrO ₄ ²⁻												

Key:

☐ = Soluble

☒ = Not soluble

-TIE, NIE, SI:

-TIE: Total Ionic Equation

-NIE: Net Ionic Equation, only of precipitate

-SI: Spectator ions, ions not in NIE

EXAMPLE QUESTION:

